

(10/11/89)

ER PROGRAM DATA ASSESSMENT
SUMMARY REPORT FORM

E88-2939, E88-3068,
Batch No. E88-3080/3rd Quarter 1988

Area 2 - 881 Hillside;
Site Area 4 - Mound; Area 5 - East Trenches

Laboratory RFP - 881 General Labs

No. of Samples/Matrix 38/Water

Reviewer Org. TechLaw, Inc.

Sample Numbers 56-86, 70-86, 2-87, 62-86, 4-87, TB(7/19/88), FB(7/19/88), 69-86, 52-87, 10-74, 5-87, 9-74, 43-87, 3-87, 8-87, 25-87, 45-87, EB(7/22/88), 25-87D, 3-74, 36-87, 39-86, 32-87, TB(8/23/88), FB(8/23/88), EB(8/23/88), 27-87, 27-87D, 42-86, 31-87, 22-87, 23-87, 34-86, 35-86, 1-74, TB(8/16/88), FB(8/16/88), 17-87

Tritium Analyses by Liquid Scintillation
Data Assessment Summary

| | | Comments |
|----|-------------------------------------|----------|
| 1. | Holding Times | <u>V</u> |
| 2. | Initial and Continuing Calibrations | <u>V</u> |
| 3. | Blanks | <u>V</u> |
| 4. | Lab Replicates | <u>V</u> |
| 5. | Lab Control Samples | <u>V</u> |
| 6. | QC-LLD | <u>V</u> |
| 7. | Quench and Efficiency | <u>V</u> |
| 8. | Sample Calculations | <u>V</u> |
| 9. | Overall Assessment | <u>V</u> |

V = Data had no problems.

A = Data acceptable but qualified due to problems.

R = Data rejected.

X = Problems, but do not affect data.

Data Quality: Data contained in this batch were reviewed and found to be valid.

ADMIN RECORD

"REVIEWED FOR CLASSIFICATION

By R. B. Hoffman U

Date 7-11-90

1 REVIEWED FOR CLASSIFICATION/UCN

By George H. Seelock

Date 6/27/90

A-OU01-000057

Action Items: None

Comments: None

Note: Data Summary Tables are attached.

Marilyn Ayers October 11, 1989
Reviewer Signature Date

**Radiochemical Data Completeness
Checklist for Tritium Analyses of Soil and Water**

- A. Yes Case Narrative
 - Yes Abnormalities explained
 - Yes Matrix Problems explained
 - Yes Instrument problems explained
 - Yes Improper collection, storage, preservation, container explained
 - Yes Hold times met, explained if not met

- B. Yes Initial and Continuing Calibration Data Package
 - Yes Detector ID with Program Settings
 - Yes Date of Performance Check
 - Yes Batch Number
 - Yes NBS Traceable Standards with Certification Date and DPMs
 - Yes Quench Monitor Values and CPM for Standard used to check long term performance of cocktail and instrument
 - Yes Background-Blank vials CPM Results

- C. Yes Blanks Data Package
 - Yes Detector ID
 - Yes Date Analyzed
 - Yes Collection Date
 - Yes Sample IDs counted with blank
 - Yes Detection Level reported

- D. Yes Lab Replicate Data Package
 - Yes Detector ID
 - Yes Date Analyzed
 - Yes Collection Date
 - Yes Value obtained for sample, replicates, mean values
 - Yes Count Durations of samples and backgrounds
 - Yes Statistical analysis of Range, Control Limits

- E. Yes Lab Control Samples Data Package
 - Yes Sample ID, Detector ID
 - Yes Values obtained, true value of sample
 - Yes Statistical Analysis of Results

- F. Yes Lower Limits of Detection
 - Yes Background measurements
 - Yes Detector ID
 - Yes Date of count
 - Yes Calculated LLD comparison with Required Detection Level

- G. Yes Quench and Efficiency
 Yes Quench Monitor used
 Yes Quench Monitor Values and Efficiency Values
 Yes Detector ID
 Yes NBS traceable standards with certification date and DPM
 Yes Batch number and sample IDs; Efficiency standard and backgrounds
 used
 Yes Volume added to cocktail
 Yes Cocktail used
 Yes Vials used
- H. Yes Sample Data Package
 Yes Printed Report of results for sample, reruns
 Yes Computer calculations
 Yes Analyst initials

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (pCi/L)

TABLE #: E88-2939/3rd Quarter 1988 Page 1 of 5

SITE NAME: Rocky Flats Plant - 881 Hillside

| Sample Location | 56-86 | 70-86 | 2-87 | 62-86 | 4-87 | TB | FB | 69-86 | 52-87 | | | | | | | |
|---------------------|------------|------------|-----------|------------|-----------|---------|---------|------------|------------|----|-------|-----|----|-------|--|---|
| Sample Number | 2939-56-86 | 2939-70-86 | 2939-2-87 | 2939-62-86 | 2939-4-87 | 2939-TB | 2939-FB | 2939-69-86 | 2939-52-87 | | | | | | | |
| Sample Date | 7/14/88 | 7/14/88 | 7/14/88 | 7/15/88 | 7/15/88 | 7/19/88 | 7/19/88 | 7/19/88 | 7/19/88 | | | | | | | |
| Matrix | Water | Water | Water | Water | Water | Water | Water | Water | Water | | | | | | | |
| Parameter | DL | | | | | | | | | | | | | | | |
| | pC/L | Val. | +/- | DQ | Val. | +/- | DQ | Val. | +/- | DQ | Val. | +/- | DQ | | | |
| Gross Alpha | 2 | | | | | | | | | | | | | | | |
| Gross Beta | 4 | | | | | | | | | | | | | | | |
| Total Strontium | 1 | | | | | | | | | | | | | | | |
| Total Cesium | 1 | | | | | | | | | | | | | | | |
| Radium 228 | 1 | | | | | | | | | | | | | | | |
| Tritium | 400 | 200 U | | V | 230 | 90 | V | 220 U | | V | 210 U | | V | 200 U | | V |
| Uranium 234 & 233 | 0.6 | | | | | | | | | | | | | | | |
| Uranium 235 | 0.6 | | | | | | | | | | | | | | | |
| Uranium 238 | 0.6 | | | | | | | | | | | | | | | |
| Plutonium 239 & 240 | 0.01 | | | | | | | | | | | | | | | |
| Americium 241 & 242 | 0.01 | | | | | | | | | | | | | | | |
| Radium 226 | 0.05 | | | | | | | | | | | | | | | |
| Gamma scan | | | | | | | | | | | | | | | | |
| Other Isotopes | | | | | | | | | | | | | | | | |

E Exceeds calibration range.
 U Indicates the parameter was not detected above the Instrument Quantitation Limit
 J Quantitation is approximate due to limitations identified during the quality control review
 . Value is rejected due to other contractual criteria examined during the quality control review
 .. Value is rejected due to blank contamination identified during the quality control review
 DL Detection Limit in PicoCuries per Liter (pCi/L)

DQ Data Qualifier
 V Valid
 A Acceptable with qualifications
 R Rejected
 2939q3/rk12

Rockwell ER Program
Rocky Flats Plant

Date: 10/11/89

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (pCi/L)

TABLE #: E88-2939/3rd Quarter 1988 Page 2 of 5

SITE NAME: Rocky Flats Plant - 881 Hillside

| Sample Location | 10-74 | 5-87 | 9-74 | 43-87 | 3-87 | 8-87 | 45-87 | EB | | |
|---------------------|------------|-----------|-----------|------------|-----------|--------------|------------|---------|-----|----|
| Sample Number | 2239-10-74 | 2939-5-87 | 2939-9-74 | 2939-43-87 | 2939-3-87 | 2939-8-87 TB | 2939-45-87 | 2939-EB | | |
| Sample Date | 7/20/88 | 7/20/88 | 7/21/88 | 7/21/88 | 7/22/88 | 7/22/88 | 7/22/88 | 7/22/88 | | |
| Matrix | Water | Water | Water | Water | Water | Water | Water | Water | | |
| Parameter | DL | Val. | +/- | DQ | Val. | +/- | DQ | Val. | +/- | DQ |
| | pCi/L | | | | | | | | | |
| Gross Alpha | 2 | | | | | | | | | |
| Gross Beta | 4 | | | | | | | | | |
| Total Strontium | 1 | | | | | | | | | |
| Total Cesium | 1 | | | | | | | | | |
| Radium 228 | 1 | | | | | | | | | |
| Tritium | 400 | 210 U | | V | 210 U | | V | 210 U | | V |
| Uranium 234 & 233 | 0.6 | | | | | | | | | |
| Uranium 235 | 0.6 | | | | | | | | | |
| Uranium 238 | 0.6 | | | | | | | | | |
| Plutonium 239 & 240 | 0.01 | | | | | | | | | |
| Americium 241 & 242 | 0.01 | | | | | | | | | |
| Radium 226 | 0.05 | | | | | | | | | |
| Gamma scan | | | | | | | | | | |
| Other Isotopes | | | | | | | | | | |

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Rockwell ER Program
Rocky Flats Plant

Date: 10/11/89

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (pCi/L)

TABLE #: E88-3068/3rd Quarter 1988 Page 3 of 5

SITE NAME: Rocky Flats Plant - Mound

| Sample Location | 22-87 | 23-87 | 34-86 | 35-86 | 1-74 | TB | FB | 17-87 |
|---------------------|------------|------------|------------|------------|-----------|---------|----------|------------|
| Sample Number | 3068-22-87 | 3068-23-87 | 3068-34-86 | 3068-35-86 | 3068-1-74 | 3068-TB | 3068-FB | 3068-17-87 |
| Sample Date | 8/12/88 | 8/12/88 | 8/12/88 | 8/12/88 | 8/12/88 | 8/16/88 | 8/16/88 | 8/16/88 |
| Matrix | Water | Water | Water | Water | Water | Water | Water | |
| DL pCi/L | Val. +/- | DQ | Val. +/- | DQ | Val. +/- | DQ | Val. +/- | DQ |
| Gross Alpha | 2 | | | | | | | |
| Gross Beta | 4 | | | | | | | |
| Total Strontium | 1 | | | | | | | |
| Total Cesium | 1 | | | | | | | |
| Radium 228 | 1 | | | | | | | |
| Tritium | 400 210 U | V | 210 U | V | 260 90 | V | 210 U | V |
| Uranium 234 & 233 | 0.6 | | | | | | | |
| Uranium 235 | 0.6 | | | | | | | |
| Uranium 238 | 0.6 | | | | | | | |
| Plutonium 239 & 240 | 0.01 | | | | | | | |
| Americium 241 & 242 | 0.01 | | | | | | | |
| Radium 226 | 0.05 | | | | | | | |
| Gamma scan | | | | | | | | |
| Other isotopes | | | | | | | | |

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Rockwell ER Program
Rocky Flats Plant

Date: 10/11/89

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (pCi/L)

TABLE #: E88-3080/3rd Quarter 1988 Page 4 of 5

SITE NAME: Rocky Flats Plant - East Trenches

| Sample Location | 25-87 | 25-87D | 3-74 | 36-87 | 39-86 | 32-87 | TB | FB | EB |
|---------------------|------------|-------------|-----------|------------|------------|------------|---------|---------|---------|
| Sample Number | 3080-25-87 | 3080-25-87D | 3080-3-74 | 3080-36-87 | 3080-39-86 | 3080-32-87 | 3080-TB | 3080-FB | 3080-EB |
| Sample Date | 8/16/88 | 8/16/88 | 8/19/88 | 8/19/88 | 8/19/88 | 8/23/88 | 8/23/88 | 8/23/88 | 8/23/88 |
| Matrix | Water | Water | Water | Water | Water | Water | Water | Water | Water |
| Parameter | DL | | | | | | | | |
| Gross Alpha | 2 | | | | | | | | |
| Gross Beta | 4 | | | | | | | | |
| Total Strontium | 1 | | | | | | | | |
| Total Cesium | 1 | | | | | | | | |
| Radium 228 | 1 | | | | | | | | |
| Trilium | 400 210 U | V 210 U | V 230 90 | V 310 U 90 | V 200 U | V 210 U | V 200 U | V 200 U | V 210 U |
| Uranium 234 & 233 | 0.6 | | | | | | | | |
| Uranium 235 | 0.6 | | | | | | | | |
| Uranium 238 | 0.01 | | | | | | | | |
| Plutonium 239 & 240 | 0.01 | | | | | | | | |
| Americium 241 & 242 | 0.01 | | | | | | | | |
| Radium 226 | 0.05 | | | | | | | | |
| Gamma scan | | | | | | | | | |
| Other Isotopes | | | | | | | | | |

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Rockwell ER Program
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RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (pCi/L)

TABLE #: E88-3080/3rd Quarter 1988 Page 5 of 5

SITE NAME: Rocky Flats Plant - East Trenches

| Sample Location | 27-87 | 27-87D | 42-86 | 31-87 | | | |
|---------------------|------------|-------------|------------|------------|----------|----|--|
| Sample Number | 3080-27-87 | 3080-27-87D | 3080-42-86 | 3080-31-87 | | | |
| Sample Date | 8/23/88 | 8/23/88 | 8/25/88 | 8/25/88 | | | |
| Matrix | Water | Water | Water | Water | | | |
| DL | | | | | | | |
| Parameter | Val. +/- | DQ | Val. +/- | DQ | Val. +/- | DQ | |
| Gross Alpha | 2 | | | | | | |
| Gross Beta | 4 | | | | | | |
| Total Strontium | 1 | | | | | | |
| Total Cesium | 1 | | | | | | |
| Radium 228 | 1 | | | | | | |
| Tritium | 400 200 U | V | 200 U | V | 200 U | V | |
| Uranium 234 & 233 | 0.6 | | | | | | |
| Uranium 235 | 0.6 | | | | | | |
| Uranium 238 | 0.6 | | | | | | |
| Plutonium 239 & 240 | 0.01 | | | | | | |
| Americium 241 & 242 | 0.01 | | | | | | |
| Radium 226 | 0.05 | | | | | | |
| Gamma scan | | | | | | | |
| Other Isotopes | | | | | | | |

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